AZTEC PRINCESS

MFG BY PMC ELECTRONICS CO. INC.

Our games are designed with the customer in mind and we appreciate any and all comments from the field.

The Motorola TV and main circuit board have been designed to give you, the customer, the most trouble free unit possible. The circuits used are all solid state for long life and reliability.

In the event your unit does require servicing, this manual will aid your efforts..

This Manual consists of the following sections:

BEFORE INSTALLING, MAKE SURE THE GAME WILL HAVE A GROUNDED ELECTRICAL CONNECTION. IF A THREE-PRONG OUTLET IS NOT AVAILABLE, USE A COLD-WATER PIPE OR OTHER SUITABLE FIXTURE. RELYING SOLELY UPON THE TV MONITOR CHASSIS FOR "GROUND" WILL RESULT IN MARGINAL OPERATION: POOR QUALITY DISPLAY; SUSCEPTIBILITY TO ELECTRICAL NOISE FROM NEARBY GAMES, SWITCHBOARDS, PINSPOTTERS, JUKEBOXES, ETC.; INTERMITTENT LOGIC BOARD PROBLEMS; AND INCREASED SAFETY HAZARD.

CABINET MAINTENANCE

Cleaning of the cabinet may be done with any non-abrasive household cleaner. A good grade of clear commercial interior Urthane or Flex-O-Varathane, using a #4 ox brush, will cover all scratch marks. Sherman-Williams lacquer bar top spray (containing Urthane) will do the same.

PC BOARD SHIPPING PROCEDURE

Careful packing is recommended as PMC can not be liable for boards damaged in transit. When packaging PC Board for shipment, use bubble wrap, foam rubber or styrofoam to secure the board. Also include a short statement describing the basic problem with the board.

THIS SERVICE MANUAL HAS BEEN PREPARED TO AID IN RECTIFYING ANY PROBLEMS THAT MIGHT ARISE. IF ASSISTANCE IS REQUIRED PLEASE CONTACT:

PMC ELECTRONICS CO., INC.
1120 Industrial Hwy.
Southampton, PA 18966

(215) 322-2925

RULES OF PLAY

PRINCESS

PLAYERS: 1, 2, 3 or 4

The object of the game is to score while preventing your opponent from doing the same. The player or players who score 11 points or the most points in 2 1/2 minutes is the winner.

In the 1 or 3 player mode a super goalie or super racket will appear.

ADJUSTMENTS:

There are two types of adjustments that can be made to your unit: TV and CIRCUIT BOARDS.

The controls on the TV Monitor work as in any normal TV. Vertical Hold, Brightness, Contrast & Horizontal Hold. These are located on the back side of the monitor chassis. The vertical and horizontal hold controls should be set in the middle of their range. Turn control until picture tears or rolls, turn control back until picture tears or rolls in the opposite direction and then reset control to the middle of the stable range. The brightness and contrast should be set at a point where the court in the center of the playfield is clearly visible.

CIRCUIT BOARD:

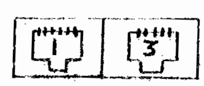
GAME TIME: INCREASE CLOCKWISE
DECREASE COUNTERCLOCKWISE

LOOKING AT MOVEABLE PORTION OF POT

OPTION: TIMER MAY BE DISABLE BY CUTTING TRACE TO PIN 7 OF IC 555 (UNDERSIDE OF BOARD)

IC 555 IS LOCATED IN FRONT AND TO THE RIGHT OF POTENTIOMETER.

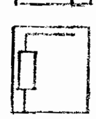
SET POINT SCORE: SET AT 11 VARIABLE 0 TO 99
TURN TO ANY SCORE DESIRED



FREE GAME: WHEN PLUG INSERTED PROPERLY AND SCORE MATCHED PLAYER AWARDEDFREE GAME:

FREE GAME:  1KΩ

REMOVE PLUG AND INSERT TO YOUR OPTION

NO FREE GAME: 

DIAGNOSIS

SYMPTOM	CHECK
NO PICTURE	FUSE, POWER CORD, HARNESS CONNECTIONS
NO SOUND	SPEAKER CONNECTIONS, VOLUME ADJUSTMENTS
ROLLING OR TEARING PICTURE	READJUST TV CONTROLS
GAME WILL NOT START	COIN MECHANISM, HARNESS CONNECTIONS

SYMPTOM	PROBABLE CAUSE BLOCKS
NUMBER PROBLEMS	SCORE SECTION OR COURT DISPLAY SECTION, TIMING CHAIN, COURT DISPLAY, VIDEO OUTPUT
PADDLE PROBLEMS	PADDLE GENERATOR, TIMING CHAIN, BAD PADDLE CONTROL (POT), BALL PADDLE COINCIDENCE, COURT DISPLAY, VIDEO OUTPUT
BALL PROBLEMS	BALL GENERATOR, TIMING CHAIN, BALL WALL COINCIDENCE BALL PADDLE COINCIDENCE HORIZONTAL BALL SPEED COURT DISPLAY, VIDEO OUTPUT
COURT PROBLEM	COURT DISPLAY, TIMING CHAIN, VIDEO OUTPUT, TV
SOUND PROBLEM	SOUND BLOCK, SCORE, PLAY BALL WALL COINCIDENCE BALL PADDLE COINCIDENCE TV

TV TROUBLESHOOTING

NO POWER: Check for blown fuses and proper line voltage. Also check to see if the interlock switch is in the on position, either with the rear door closed or with the switch defeated.

NO PICTURE: Check the monitor fuses. If blown, visually check the monitor for shorts. If fuses are OK, look to see if the CRT's choke filament is glowing and if there are any loose wires.

WHITE PICTURE BUT NO DISPLAY: This symptom indicates two problems. Either the PC Board or the TV is malfunctioning. To double check and make certain of the area of trouble, check the PC Boards making sure power is reaching them and check the edge connectors making sure they are positioned correctly on the PC Boards. Also check the twelve (12) pin Molex connector on the TV making sure it is correctly connected.

WAVY PICTURE: If this condition exists, check the following two items to be sure they are functioning properly. First check the five (5) volt power supply on the two main circuit boards. This can be done by measuring between the two heavy traces on each board with a voltmeter or an oscilliscope. There should be 5± 1/4 volts on each board. Next, locate pin 32 on the large monitor circuit board. Measure the voltage from this pin to ground. There should be seventy-three (73) volts at this point. If the voltage is either too high or too low, adjust the 73 volt regulator pot located on the PC Board in the upper left hand corner. DO NOT TURN THIS POT THRU THE WHOLE RANGE.

Damage will occur to it's associated parts. All that needs to be done is a slight turn to adjust properly.

IMPROPER DISPLAY: Recheck all picture adjustments (brightness, contrast, etc.) to make sure they are correct.

REMOVAL & REPLACEMENT PROCEDURES

TV MONITOR REMOVAL

1. Lift top (unfasten lock)
2. 4 screws on corners (wood)
3. Lift monitor out (unfasten connections on monitor back)

TV MONITOR REPLACEMENT

To replace the TV monitor, follow in reverse order the steps for monitor removal.

MOTOROLA MONITOR PC BOARD REMOVAL

POWER, AUDIO PC BOARD: To remove this PC Board, simply locate it on the left side of the monitor in back of the power transformer. Carefully pull up on the board. To replace this board, locate the slot between Pins 3 & 4 and put this on your left side, then simply insert into the edge connector.

MONITOR PC BOARD: To remove the monitor PC Board, take a screwdriver or a similar object and slowly pry the PC Board up off of the chassis until it clears the pins. Next, unplug the socket from the yoke and slide board out. To replace this board, follow the above steps in reverse order.

MAIN CIRCUIT BOARD

REMOVAL: Disconnect plug, slide board out.

Recommended tools to help service Logic Board:

1. 60 watt solder iron
2. Desoldering tool
3. Chain nose pliers 5"
4. Diagonal cutters 4"
5. Wire strippers

REPLACEMENT: Follow the reverse steps of the removal procedures to replace the PC Boards.

W A R R A N T Y

The equipment you have just purchased has been designed, tested and inspected before being shipped to you. If properly operated in accordance with the instructions furnished, it should provide you with the finest results.

This warranty shall not apply unless the equipment or part is returned to distributor nor shall it apply to equipment which has been subjected to misuse, accident or neglect.

A. The game is warranted for a period of 90 days, excluding the TV and LOGIC BOARD.

   1. TV warranty 30 days.
   2. Logic Board warranty 90 days.

B. After this warranty period has expired we can supply any replacement part for this equipment at a nominal charge for parts and labor.

The warranty registration card below must be filled out and mailed within ten days of purchase to place this warranty into effect. Return card to: PMC ELECTRONICS CO., INC.
1120 Industrial Hwy.
Southampton, PA 18966

WARRANTY REGISTRATION

The following equipment is hereby registered and guaranteed as described only if this card is filled in and mailed within ten days of purchase.

PURCHASER________________________________

STREET ADDRESS____________________________

CITY__________________STATE________ZIP_____

MODEL__________________SERIAL NO.__________

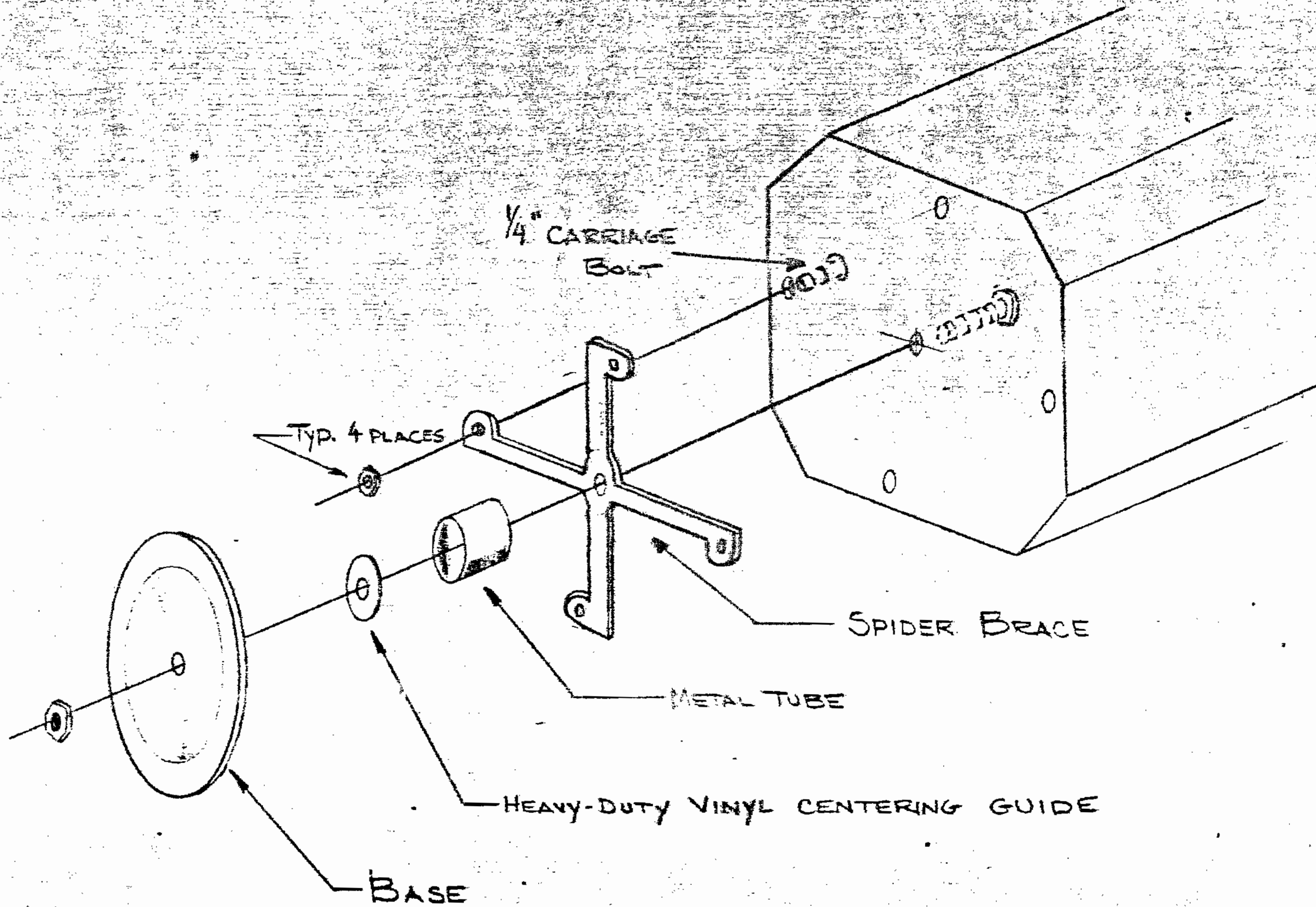
DATE OF PURCHASE__________________________

BOUGHT FROM______________________________

COMMENTS_________________________________

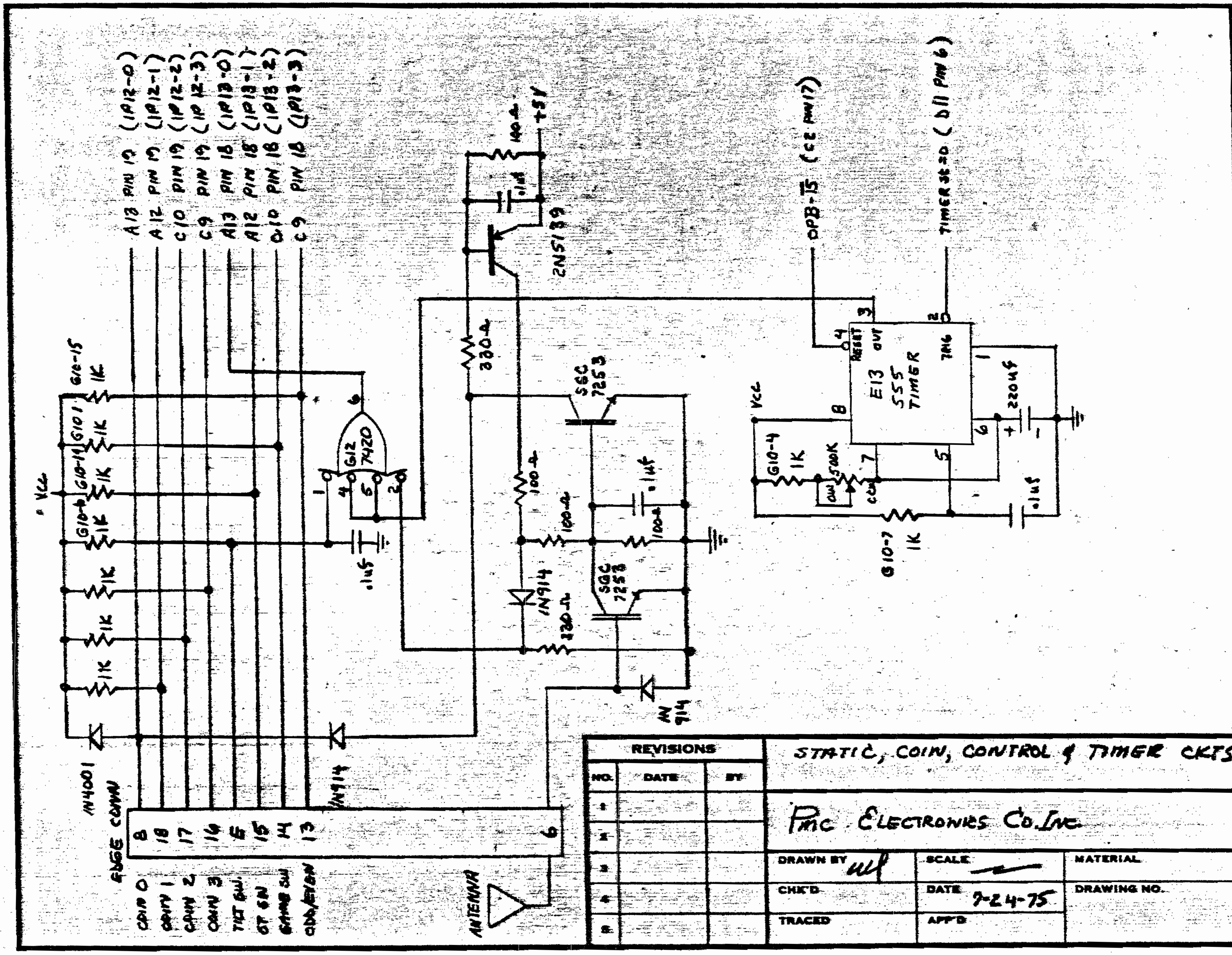
HEIGHT:

TO CHANGE THE HEIGHT OF AZTEC, REMOVE CENTER STEEL COLLAR TUBING IN BASE, CUT OFF CONNECTING BOLT, REDUCES HEIGHT TO 26 INCHES. REMOVING ENTIRE BASE REDUCES HEIGHT TO 22 INCHES.



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COCKTAIL CABINET BASE ASS'Y		
PMC ELECTRONICS CO INC		
DRAWN BY G. Thomas Crowley	SCALE	MATERIAL
CHK'D	DATE 3-4-75	DRAWING NO. CC-105-A
TRACED	APP'D	



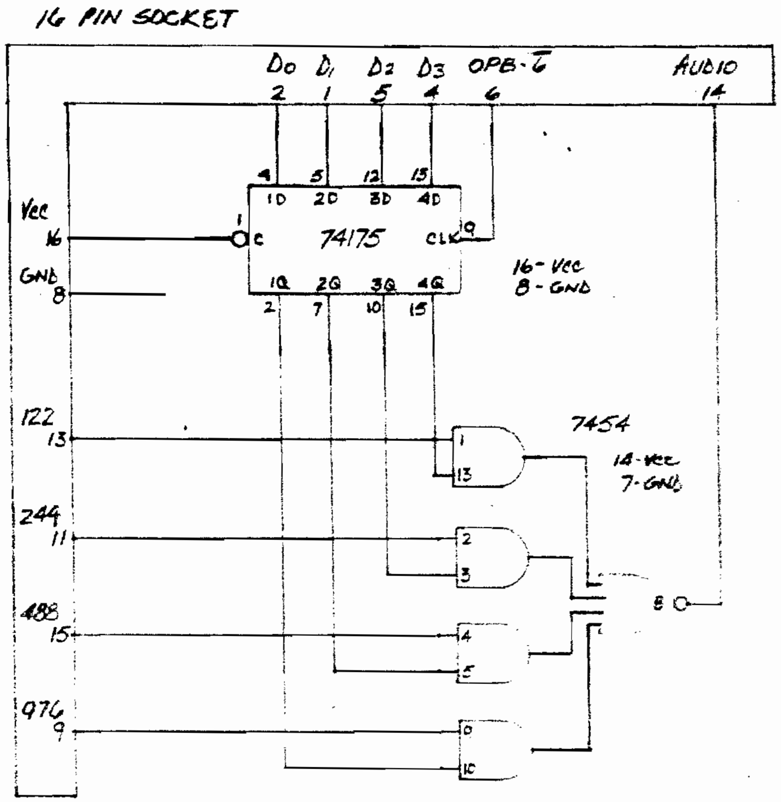
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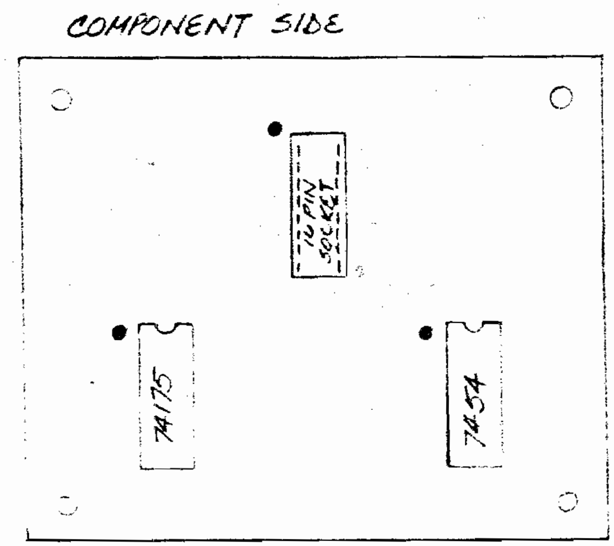
STATIC, COIN, CONTROL & TIMER CKTS

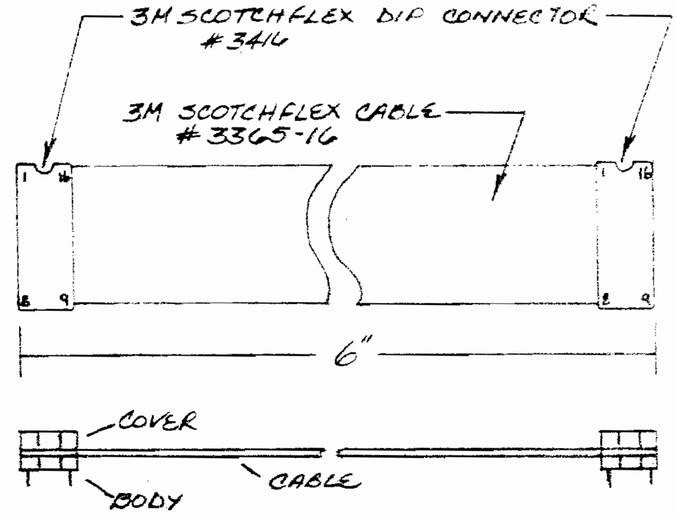
PMC ELECTRONICS CO. INC.

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18AE-01E-8½X11





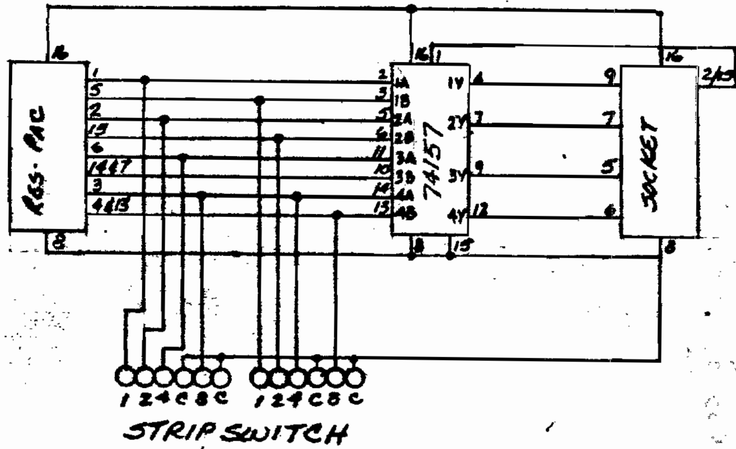


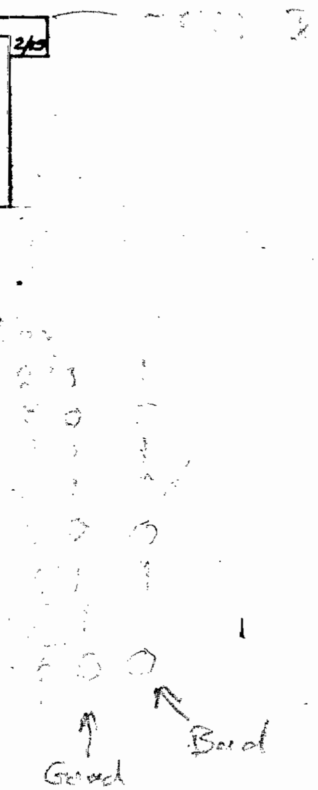
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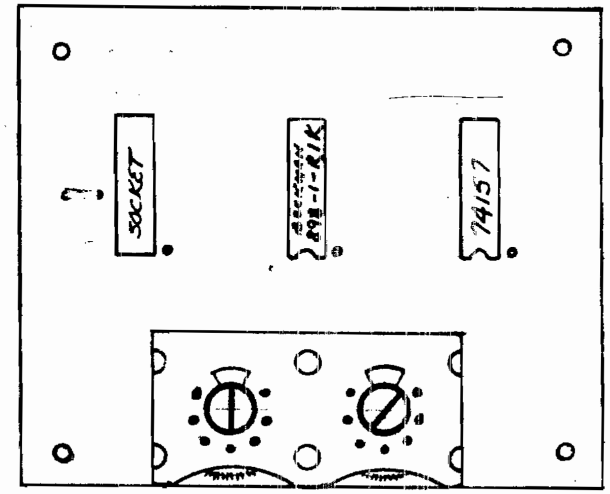
SOUND MODULE "PAVE 2000"

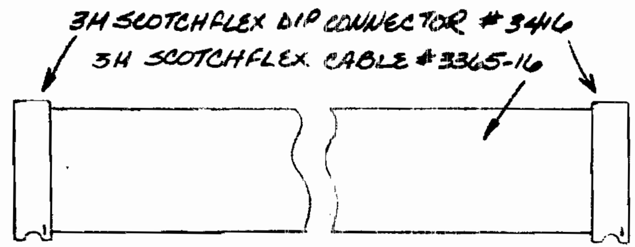
PAR ELECTRONICS CO SOUTHAMPTON PA 18966

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TRACED	APP'D	









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SET POINT MODULE "PAVE 2000"

PAC ELECTRONICS CO SOUTHAMPTON PA 18966

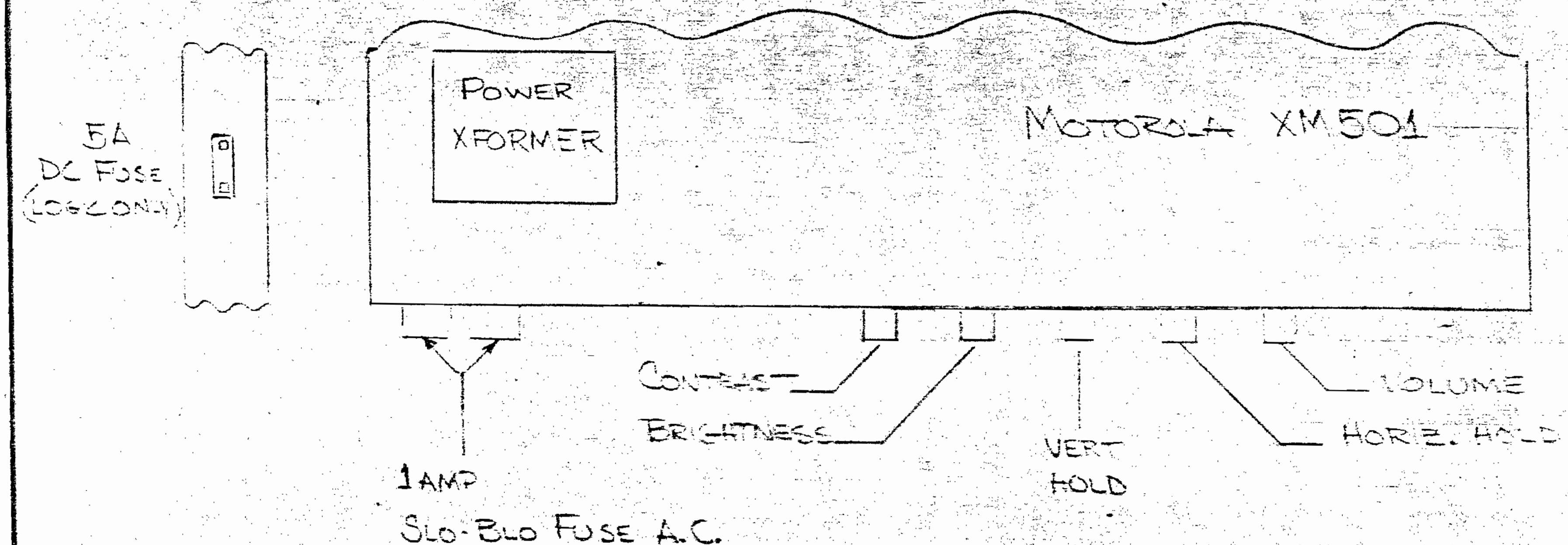
DRAWN BY JJB	SCALE NTS	MATERIAL —
CHK'D	DATE 7-16-75	DRAWING NO. A-504
TRACED	APP'D	

PRINCESS -10V POWER SUPPLY PARTS LIST — PRINCESS SOUND BOARD

Unit Qty.	DESCRIPTION	Unit Qty.	DESCRIPTION	Unit Qty.	DESCRIPTION
1	POWER TX 20VCT 220 MA	8	PINS - AMP #60618-1	1	74175 IC
1	½ A FUSE 3 AG	8	SOCKETS - AMP #60617-1	1	7454
1	ELECT CAP 8000 µF 16V	1	PIN HOUSING AMP #1-480432-0	1	16 PIN IC SOCKET
2	DIODE 1N4001	1	SOCKET HOUSING " #1-480431-0	2	16 PIN IC PLUG
1	RESISTOR 20Ω 5W	1	1/4" GROMMENT	1	PC BOARD
1	ZENER DIODE 10V 5% 2W	40"	#22AWG STD WIRE		
1	CAP .1µF 12V DISC	2	FUSE CLIP LITTLE FUSE #102068		FREE GAME HEADER
1	PC BOARD			1	16 PIN SOCKET
				1	1KΩ RESISTOR
	SET POINT MODULE				PADDLE MODULE
1	PC BD - SP100			1	7432 IC
1	SN74157			1	7402 IC
1	BECKMAN RES PACK 898-1-R1K			2	.1µF CAP DISC 12V
1	SOCKET (DIP) 16 PIN			1	SOCKET (DIP) 16 PIN
1	EECO STRIPSWITCH #2A215012G			2	3M SCOTCHFLEX CONN. #3416
2	3M SCOTCHFLEX CONNECTOR #3416			6"	" " CABLE #3365-16
6"	" " CABLE #3365-16				

PRINCESS LOGIC BOARD PARTS LIST

Unit Qty.	DESCRIPTION	Unit Qty.	DESCRIPTION	Unit Qty.	DESCRIPTION
1	PC BD.	1	74155 IC	1	1N4001 DIODE
1	4040/4004 IC	2	74157	3	1N914 DIODE
1	4289 IC	2	74175	4	SGC 7253
1	4002-1	16	74191	1	2N5139
1	4201	1	74368/8T98		
3	4702-A	5	825126	2	24 PF MICA CAP.
1	7400	5	555	1	100 PF MICA
3	7402	2	7474 IC	1	.001 uF DISC
2	7404	1	7425	4	.01 uF MYLAR
1	7406	1	8 MHZ CRYSTAL	50	.01 uF DISC
3	7407	1	5.185 MHZ	1	.47 uF DISC
5	7408			3	4.7 uF ELECT.
1	7420	2	6KΩ RES, 16 PIN PAC (BECKMAN)	1	220 uF ELECT.
1	7427	2	1KΩ " " "		
2	7432			4	24 PIN IC SOCKET
1	7454	9	100Ω 1/4 W 5% RES.	12	16 PIN " "
2	7486	4	330Ω	1	40 PIN IC "
1	7489	5	1KΩ		
2	74120	1	47Ω		
4	74150	1	1MΩ		
1	74153	1	500K POT		
4	74154	1	10KΩ RESISTOR		



VIEW FROM CASH BOX DOOR OPEN

SERVICE NOTES -

1. TO OPEN TABLE TOP, REACH INSIDE CASH BOX DOOR & RELEASE LATCH ON UPPER RIGHT HAND SIDE.

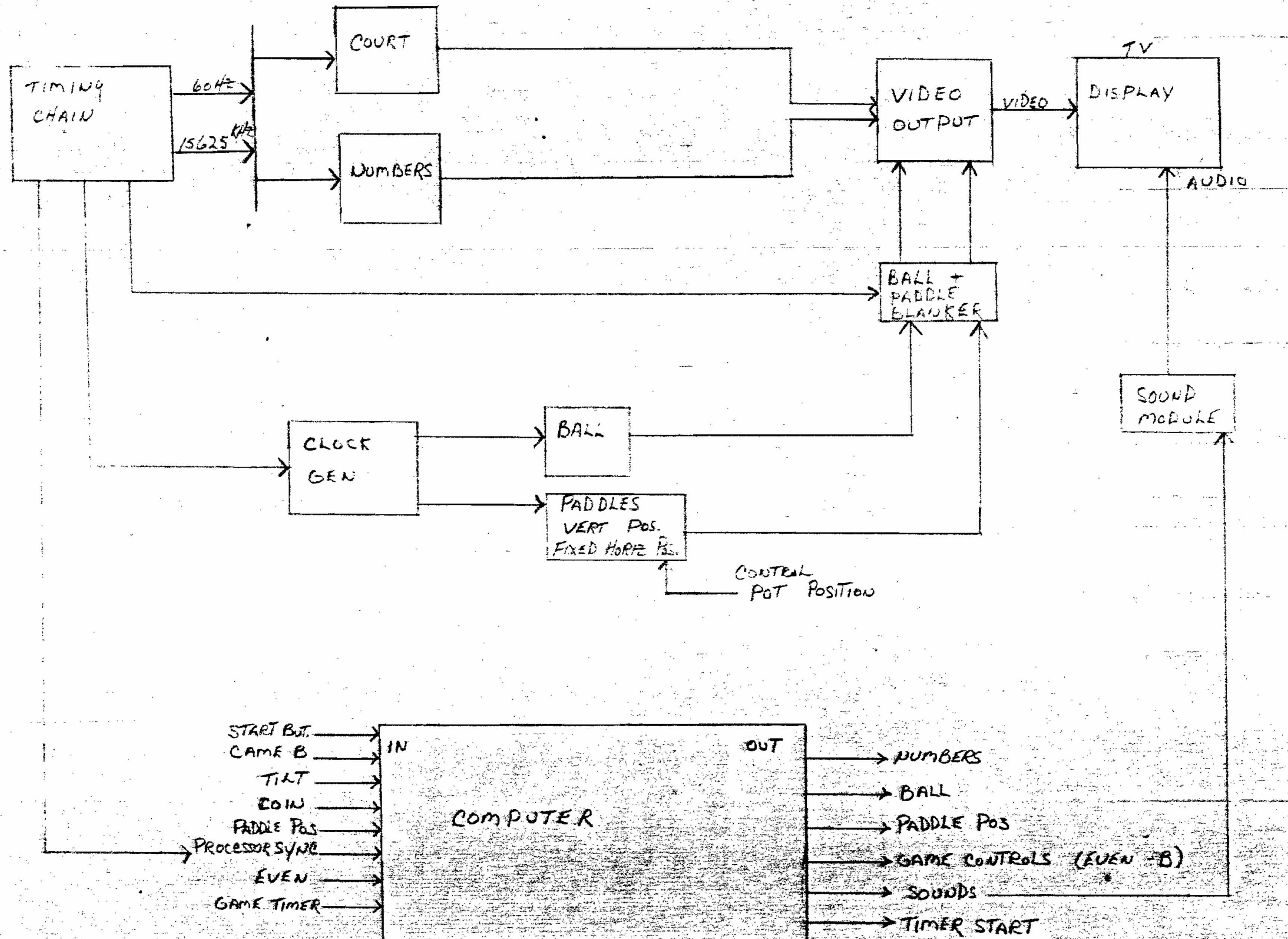
2. TO EMPTY CASH BOX REMOVE SHIPPING SCREEN LOCATED IN LOWER RIGHT HAND CORNER OF CASH BOX DOOR.

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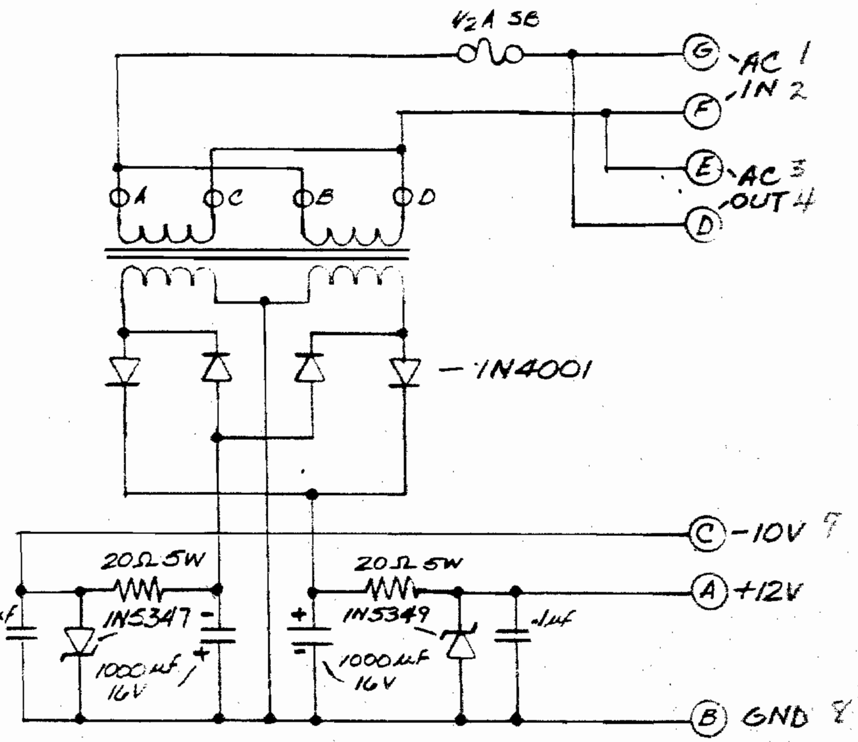
COCKTAIL CABINET MONITOR ADJUSTMENTS

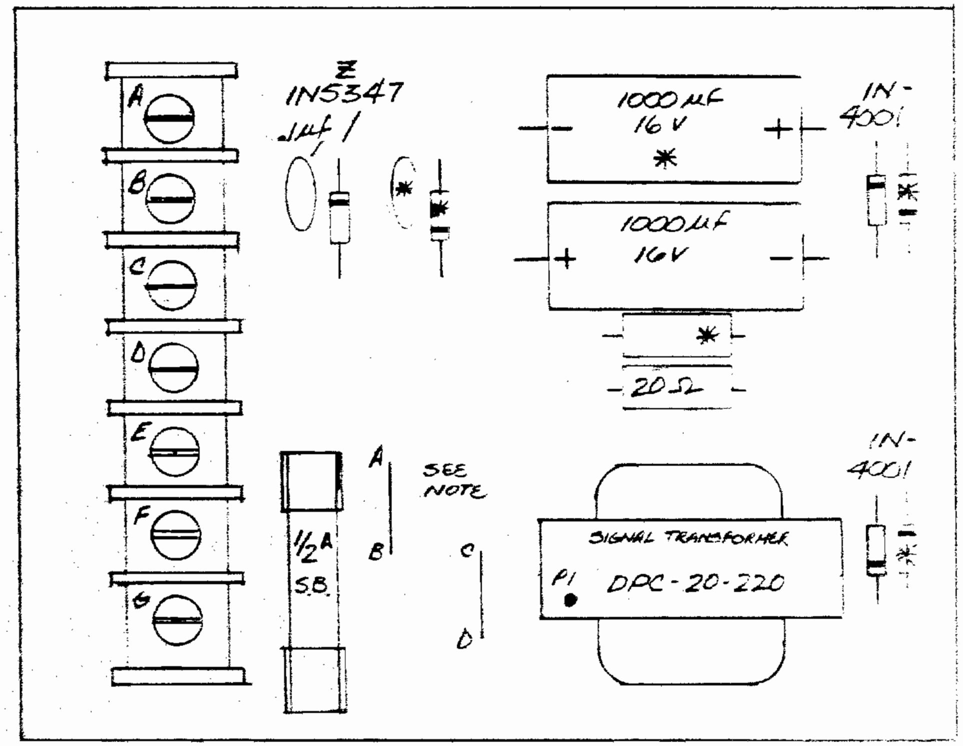
PMC ELECTRONICS CO. INC

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TIMING CHAIN
60Hz
15625 KHz
COURT
NUMBERS
VIDEO OUTPUT
VIDEO
TV
DISPLAY
AUDIO
BALL + PADDLE BLANKER
SOUND MODULE
CLOCK GEN
BALL
PADDLES VERT POS. FIXED HORIZ POS.
CONTROL POT POSITION
START BUT.
GAME B
TILT
COIN
PADDLE POS
PROCESSOR SYNC
EVEN
GAME TIMER
IN
COMPUTER
OUT
NUMBERS
BALL
PADDLE POS
GAME CONTROLS (EVEN - B)
SOUNDS
TIMER START





8 Pins Amp# 66618-1
8 Sockets Amp# 66617-1

1 Pin Housing Amp# 1-480432-0
1 Socket Housing Amp - 1-480431-0

6 #20 AWG - STD - 8" Long

1 1/4" Grommet

110V - JUMPER A TO B & C TO D
220V - REMOVE A TO B & C TO D - JUMPER B TO C

✱ - FOR OPTIONAL +12 V POWER SUPPLY

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NO.	DATE	BY	POWER SUPPLY - 10V & +12 "PAVE 2000"
1			PMC ELECTRONICS CO INC SOUTHAMPTON PA 18966
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3			DRAWN BY JJB — SCALE NTS — MATERIAL —
4			CHK'D — DATE 6-26-75 — DRAWING NO. PS-106
5			TRACED — APP'D

REPLACEMENT PARTS LIST

ELECTRICAL PARTS

REF. NO.	PART NUMBER	DESCRIPTION
	1Y25017A01	MONITOR PANEL: complete; KT364LM
	1Y25017A02	POWER, Audio Panel: complete: KT365LM

CAPACITORS

REF. NO.	PART NUMBER	DESCRIPTION
C-1	23C65282A41	50 mf 50V Lytic
C-2	23C65282A41	50 mf 50V Lytic
C-3	21S180D10	220 pf 20% 100V X5F (Use 21R132503)
C-4	23C65282A41	50 mf 50V Lytic
C-5	21S180B98	180 pf 10% 500V X5F
C-6	23S10255A78	470 mf 16V Lytic
C-7	21S180C01	680 pf 10% 500V X5F
C-8	21S180B85	560 pf 10% 500V X5F
C-10	8S10191B67	.22 mf 10% 250V Polyester
C-11	8S10191A54	.0068 mf 10% 160V Polyester
C-12	21S180D10	220 pf 20% 100V X5F (Use 21R132503)
C-13	21S131625	330 pf 10% X5F
C-15	21S180C41	.0027 mf 10% 500V Z5F (Use 21K121699)
C-16	23S10229A07	1.0 mf +40–20% 15V Lytic (Use 23C43280A17)
C-17	8S10191B90	.033 mf 10% 160V Polyester
C-18	8S10299A73	.01 mf 10% 100V Poly carb
C-19	8S10299A74	.0082 mf 10% 160V Poly carb
C-20	8S10191B98	.01 mf 10% 250V Polyester
C-21	21S180B51	.001 mf 10% 500V X5F
C-22	8S10191B98	.01 mf 10% 160V Polyester
C-23	21S180C02	10 pf 10% N150
C-24	23D65282A40	150 mf 10V Lytic
C-25	21S180B51	.001 mf 10% 500V X5F
C-26	8S10212B53	.47 mf 10% 630V Mtlz Poly
C-27	8S10212A11	1.0 mf 10% 630V Mtlz Poly
C-28	8S10571A06	.01 mf 5% 1200V Poly Prop Foil
C-29	8S10571A23	.56 mf 10% 250V Mtlz Prop Foil
C-30	8S10191A32	.047 mf 10% 250V Polyester
C-31	21S180887	220 pf 10% 500V X5F
C32	21S180D34	.005 mf 20% 1KV Z5F (Use 21S180D31)
C-33	8S10212A69	.47 mf 10% 100V Mtlz Poly
C-34	8S10191A32	.047 10% 250V Polyester
C-35	8S10191B98	.01 mf 10% 250V Polyester
C-36	23S10255A69	4.7 mf 100V Lytic
C-37	8S10212A20	2.2 mf 10% 100V Mtzl Poly
C-38	8S10212A20	2.2 mf 10% 100V Mtlz Poly
C-39	8S10191B67	.22 mf 10% 250V Polyester
C-40	8S10212A10	1.0 mf 10% 100V Mtlz Poly (Use 8S10191A46
C-41	8S10064A06	.01 mf 10% 600V Mylar
C-42	21S180A71	470 pf 10% 500V X5F
C43	23C65807A47	400 mf/125V; 600 mf/50V; 20 mf/200V Lytic
C-44	21S180E60	.01 mf +80–20% 50V Z5V
C-47	•23C65807A52	5000 mf 20V Lytic
C-49	23S10255A31	470 mf 40V Lytic
C-50	23D65282A41	50 mf 50V Lytic
C-51	23S10255B43	40 mf 100V Lytic

DIODES & RECTIFIERS

REF. NO.	PART NUMBER	DESCRIPTION
D-1	48S134921	DIODE, Silicon: D1D; Damper
D-2	48S134978	DIODE, Silicon: D1K; Pulse Limiter
D-3	48D67120A11	DIODE, Low Power
D-4	48S137114	RECTIFIER, H. V.: Silicon; D2Y
D-5	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-6	48S137469	DIODE, Silicon: zener; D7G
D-7	48S134917	DIODE, Dual: D1C; Detector
D-8	48S67120A11	DIODE, Low Power
D-9	•48S191A10	RECTIFIER, Silicon: 91A10
D-10	48S191A10	RECTIFIER, Silicon: 91A10
D-11	48S101A10	RECTIFIER, Silicon: 91A10
D-12	48S191A10	RECTIFIER, Silicon: 91A10
D-13	48D67120A11	DIODE, Low Power
D-14	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-15	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-16	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-17	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-18	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D-19	48D67120A11	DIODE, Low Power
D-20	•48S10641D43	DIODE, Silicon: D4.3
D-21	48D67120A11	DIODE, Low Power
D-22	48S191A05	RECTIFIER, Silicon: 91A05 (Use 48S191A07)
D23	48S191A05	RECTIFIER Silicon: 91A05 (Use 48S191A07)

FUSES

REF. NO.	PART NUMBER	DESCRIPTION
F-1	65S139424	FUSE: 1A-250V
F-2	65S139424	FUSE: 1A-250V

INTEGRATED CIRCUITS

REF. NO.	PART NUMBER	DESCRIPTION
IC-1	•51S10732A01	INTEGRATED CIRCUIT: T3F

COILS & CHOKES

REF. NO.	PART NUMBER	DESCRIPTION
L-1	24D68822A08	HORIZ SET
L-2	24D68801A67	COMPENSATING: 2000 uh
L-3	24D69163A18	HORIZ LINEARITY
L-4	24V25000A74	HORIZ WIDTH: incls C42 & R68
L-5	24D68523A15	DEFLECTION YOKE

TRANSISTORS

REF. NO.	PART NUMBER	DESCRIPTION
Q-1	48S137171	1st VIDEO: A6H
Q-2	48S137127	2nd VIDEO: P2S
Q-3	48S134919	VIDEO OUTPUT: A1M
Q-4	48S137317	VIDEO DRIVER: A8H
Q-5	48S137115	SYNC SEPERATOR: A5U
Q-6	48S137172	HORIZ OSCILLATOR: A6J
Q-7	48S137127	HORIZ PULSE SHAPER: P2S
Q-8	48S137093	HORIZ DRIVER: A5F
Q-9	48S137203	HORIZ OUTPUT: A6Z
Q-10	48S137173	VERT OSCILLATOR (1): P2W
Q-11	48S137171	VERT OSCILLATOR (2): A6H
Q-12	48S137115	VERT DRIVER: A5U
Q-13	48S134900	VERT OUTPUT: A1C
Q-14	48S134952	REGULATOR DRIVER: A2J
Q-15	48S137315	REFERENCE AMP: A8G
Q-16	48S137368	REGULATOR: A8W
Q-17	48S137172	AUDIO DRIVER: A6J
Q-18	48S137168	AUDIO OUTPUT: P2V
Q-19	48S137169	5V REGULATOR, Driver: A6G
Q-20	48S137344	5V REGULATOR: A8U
Q-21	48S137476	SPOT KILLER: B1E

CONTROLS

REF. NO.	PART NUMBER	DESCRIPTION
R-5	18D68222A34	CONTRAST: 250 Ohm
R-10	18D66401A44	VIDEO BIAS: 4K
R-17	18D67858A12	FOCUS: 2 meg
R-21	18D68222A35	BRIGHTNESS: 200K
R-34	18D68222A37	HORIZ HOLD: 25K
R-59	18D66401A44	VERT LINEARITY: 4K
R-65	17D65820A38	VERT SIZE: 15 Ohm
R-74	17D65820A37	REGULATOR ADJUST: 2K
R-82	18D68222A36	VERT HOLD: 3K
R-85	18D68222A34	VOLUME: 250 Ohm

RESISTORS

REF. NO.	PART NUMBER	DESCRIPTION
R-1	6S127633	470 10% 1/2W
R-2	6S125568	22K 10% 1/2W
R-3	6S127541	56K 10% 1/2W
R-4	6S127633	470 10% 1/2W
R-6	6S128955	1500 10% 1W
R-7	6S121847	4700 10% 1/2W
R-8	6S122445	1800 10% 1/2W
R-9	6S119926	2700 10% 1/2W
R-11	6S128226	120 10% 1/2W
R-12	6S127633	470 10% 1/2W
R-13	17S10731A02	7500 5% 5W WW
R-14	6S124797	150 10% 1/2W
R-15	6S127516	82 10% 1/2W
R-18	— — — —	Part of CRT socket assembly
R-19	— — — —	Part of CRT socket assembly
R-20	— — — —	Part of CRT socket assembly
R-22	6S129296	270K 10% 1/2W
R-23	6S10053C67	27K 5% 1/2W
R-24	6S127538	3.3 meg 10% 1/2W
R-25	6S121300	27K 10% 1/2W
R-26	6S127541	56K 10% 1/2W
R-27	6S129875	2200 10% 1/2W
R-28	6S125531	180K 10% 1/2W
R-29	6S125531	180K 10% 1/2W
R-30	6S125892	47K 10% 1/2W
R-31	6S125534	100K 10% 1/2W
R-32	6S124506	3300 10% 1/2W
R-33	6S10053C53	6800 5% 1/2W
R-35	6S127541	56K 10% 1/2W
R-36	6S125545	390 10% 1/2W
R-37	6S121301	1000 10% 1/2W
R-38	6S10053C33	1000 5% 1/2W
R-39	6S127516	82 10% 1/2W
R-40	6S127547	1000 10% 1W
R-41	6S127099	220 10% 1/2W
R-42	6S127513	1500 10% 1/2W
R-43	17S10130B07	1500 10% 3W fxd mtl film
R-44	17S744356	2.2 10% 2W WW
R-45	6S120141	150K 10% 1W
R-46	6S127634	33K 10% 1W
R-47	6S128229	680K 10% 1/2W
R-48	6S10053D21	4.7 meg 10% 1/2W
R-49	6S124797	150 10% 1/2W
R-50	6S10053C45	3300 5% 1/2W
R-52	6S124506	3300 10% 1/2W
R-53	6S129874	68 10% 1/2W
R-54	6S131972	39 10% 1/2W
R-55	6S10053C65	22K 5% 1/2W
R-56	6S125535	39K 10% 1/2W
R-57	6S124506	3300 10% 1/2W
R-58	6S129793	82K 5% 1/2W
R-60	6S129875	2200 10% 1/2W
R-61	6S10053F29	820 10% 1W
R-62	6S127515	3900 10% 1/2W

REF. NO.	PART NUMBER	DESCRIPTION
R-63	6S121301	1000 10% 1/2W
R-64	17S10130C91	10 10% 1/2W (special)
R-66	6S129064	4700 10% 1W
R-67	6S122848	18K 10% 1/2W
R-68	6S124797	150 10% 1/2W
R-69	17S647132	1200 10% 5W WW (Use 17S136197)
R-71	6S119926	2700 10% 1/2W
R-72	6S124551	15K 10% 1/2W
R-73	6S129875	2200 10% 1/2W
R-75	6S121301	1000 10% 1/2W
R-76	6S124506	3300 10% 1/2W
R-77	6S129221	100 10% 1/2W
R-78	6S127005	5600 10% 1/2W
R-79	17S135589	150 10% 10W WW
R-81	6C66263A08	VARISTOR (Use 6S66263A16)
R-86	6S127099	220 10% 1/2W
R-88	6S121301	1000 10% 1/2W
R-89	————	Part of CRT Socket
R-90	6S131412	56 10% 1/2W
R-91	6S10053C39	1800 5% 1/2W
R-92	6S10053C57	10K 5% 1/2W
R-95	6S125668	22K 10% 1/2W
R-96	6S125668	22K 10% 1/2W
R-97	6S121847	4700 10% 1/2W
R-98	6S127099	220 10% 1/2W
R-99	6S128226	120 10% 1/2W

SWITCHES

REF. NO.	PART NUMBER	DESCRIPTION
SW-1	40S10624A01	SWITCH, Slide: DPDT (115V–230V)

TRANSFORMERS

REF. NO.	PART NUMBER	DESCRIPTION
T-1	25D67440A03	HORIZ DRIVER
T-2	24D69791A21	H. V. TRANSFORMER: complete
T-3	25D65840A22	VERT OUTPUT (Use 25D65840B23)
T-4	*25D68164A31	POWER

MISCELLANEOUS ELECTRICAL PARTS

REF. NO.	PART NUMBER	DESCRIPTION
V-1	20WP4	CRT (XM501-10 19VP111)
	23JEP4	CRT (XM701-10 23VP111)
	50V25008A22	SPEAKER: 4" PM; incls D22
E-1	65S139451	LAMP: No. 1436

MECHANICAL PARTS

REF. NO.	PART NUMBER	DESCRIPTION
	9D66133A28	CAP, SS Rect (HV Transformer – PRI/SEC lead)
	42B25158A01	CLAMP, Metal : Defl Yoke Mtg
	31D70080B04	CONNECTOR, PC panel: 9 contact; on chassis
S-2	*15S10390A06	CONNECTOR, PC panel: 12 contact; less key and contacts (power-audio panel)
P-1	*15S10183A69	CONNECTOR, Plug: 12 contact; less contacts (power)
	*39S10184A63	CONTACT, Plug: for power connector 15S10183A69
	39S10184A22	CONTACT: for S2 connector
	15S10630A01	COVER, nylon: slide switch; SW1
	*7S10609A03	GROMMET, Plastic: PC panel mtg
	26C66745A05	HEAT SINK: Q3
	*26C25198A01	HEAT SINK: Q20
	9C66238A02	HOLDER, Fuse: F1 & F2
	14A562353	INSULATOR, Mica: Transistor socket; Q9, Q13, Q16 & Q20 (Use 14A543810)
	28S10733A01	KEY, Plug: for S2 connector
	2S7051	NUT, hex: 3/8-32; control mtg
	5S10281A03	RIVET, drive pin: nylon; HV transf mtg
	47C66082A03	ROD, Adjustment: width coil; L4
	3S136050	SCREW, tpg: 6-20 x 1/2 clu pan hd; Q9, Q13, Q16 & Q20
	9S10143A41	SOCKET, lamp: E1
	9D67555V27	SOCKET, CRT: incls leads & resistors
	*9D25201A01	SOCKET, HV Rectifier (4): complete; incls 2nd anode lead & cup
	9C63825A01	SOCKET, transistor: Q9, Q13, Q16
	9C63825A02	SOCKET, transistor: Q20
	41D65987A01	SPRING, special: CRT aquadag grnd
	66P65173A47	TOOL, contact removel (S2 connector)

* DENOTES NEW ITEM APPEARING ON ANY LIST FOR FIRST TIME.